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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,384	08/21/2003	Thomas Weiss	FIS920030045US1	8083
29505 7590 01/17/2007 LAW OFFICE OF DELIO & PETERSON, LLC. 121 WHITNEY AVENUE NEW HAVEN, CT 06510			EXAMINER TALBOT, BRIAN K	
			ART UNIT 1762	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/17/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/645,384		WEISS ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Brian K. Talbot		1762	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 November 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

1. The response filed 11/3/06 has been considered and entered. Claims 24-31 have been canceled. Claims 1-23 remain in the application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. In light of the response filed 11/3/06, the objection to the specification concerning the Title has been withdrawn.

***Claim Rejections - 35 USC § 103***

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1,3-11 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blette et al. (5,186,982).

Blette et al. (5,186,982) teaches a pin transfer applicator and method whereby dispensing small quantities of liquid material onto a workpiece. The assembly includes an applicator having a pin moveable along a passageway from a retracted position to an extended position. As the pin moves to the extended position, a forward end of the pin picks up a small dot of liquid material and carries the dot to a position external of the housing of the applicator and into contact with a workpiece. The pin is retracted and a dot remains on the workpiece (abstract). The applicator includes a housing (12), a chamber (14) and a passageway (16) that leads from the chamber to the housing. A pin (22) is located in the passageway in communication with the passageway and the reservoir of liquid material (36). The retraction of the pin (22) deposits liquid material on the workpiece and a portion remains on the end of the pin (22). The liquid material is solder paste. Blette et al. (5,186,982) depicts a sliding seal being created between the punch and the orifice, i.e. the pin being substantially the same size of the passageway (see Figures).

Claims 1,3,4,6-11 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks (6,915,928).

Brooks (6,915,928) teaches a fluid dispenser having as nozzle defining a chamber and a dispensation orifice which communicates with the chamber. A transfer pin is moveably received within the chamber and moveable between a retracted position and a dispensing position. In the dispensing position, a portion of the contact end extends out of the chamber through the dispensation orifice (abstract). The quantity of liquid material is directed into the chamber defined by the nozzle. A transfer pin is moved toward a substrate through the chamber whereby the transfer pin carries an amount of liquid from the chamber to the substrate and then retracted

Art Unit: 1762

the transfer pin to a retracted position within the chamber (col. 3, lines 30-50). The coating material is an adhesive.

Claims 1,3-11 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bryning et al. 2001/0009136.

Bryning et al. 2001/0009136 teaches an apparatus and method for spotting a substrate by dispensing a small volume of a selected material. The device includes a tube adapted to contain liquid. An elongated fiber is disposed within the tube from axial movement therein between a raised and lowered positions to dispense a spot of liquid material on a substrate. Bryning et al. 2001/0009136 depicts a sliding seal being created between the punch and the orifice, i.e. the pin being substantially the same size of the passageway (abstract and Figs. 7a-7e).

With respect to claims 6-8, the claims recite diameter size of the dispensed material. It is the Examiner's position that this is a "result effective" variable that can be optimized by one skilled in the art. Therefore, it has been well settled that the mere "optimization" of well-known "result effective" variables is deemed as an obvious modification of the prior art absence a showing of unexpected results.

With respect to claims 14-16 and 19 which recite controlling and/or adjusting the spacing/distance of the punch from the orifice to control the shape/amount of deposited material. Blette et al. (5,186,982), Brooks (6,915,928) or Bryning et al. 2001/0009136 all teach some sort of "controlling mechanism" to ensure proper dispensing of the liquid material. Therefore, it is the Examiner's position that one skilled in the art at the time the invention was made would have had a reasonable expectation of achieving similar results with the claimed controlling

Art Unit: 1762

mechanisms as it has been well settled that the mere substitution of one well known process for another that performs the same function would be obvious without the showing of unexpected results garner therefrom.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blette et al. (5,186,982), Brooks (6,915,928) or Bryning et al. 2001/0009136 in combination with Bibeault et al. (6,775,879).

Features described above concerning the teachings of Blette et al. (5,186,982), Brooks (6,915,928) or Bryning et al. 2001/0009136 are incorporated here.

Blette et al. (5,186,982), Brooks (6,915,928) or Bryning et al. 2001/0009136 fail to teach cleaning the pin to remove residual coating material.

Bibeault et al. (6,775,879) teaches a needle cleaning system utilized for liquid dispensing systems that dispenses a quantity of material through a dispensing needle or transfer pin process (abstract).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified either pin process of Blette et al. (5,186,982), Brooks (6,915,928) or Bryning et al. 2001/0009136 to incorporate a pin cleaning step as evidenced by Bibeault et al. (6,775,879) with the advantages of maintaining a clean pin for controlling the desired proper dispensing material.

Art Unit: 1762

Claims 20,22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blette et al. (5,186,982), Brooks (6,915,928) or Bryning et al. 2001/0009136 in combination with Hess et al. (2003/0119193).

Blette et al. (5,186,982), Brooks (6,915,928) or Bryning et al. 2001/0009136 fail to teach a calibrating step of measuring the size of the droplets.

Hess et al. (2003/0119193) teaches a system and method for high throughput screening of droplets. The size of the droplet dispensed or other characteristics of the droplet is measured and parameters of the dispenser can be adjusted accordingly. Calibration of numerous droplets can be measure to include variance and standard deviation of the droplets ([0112-0113]).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Blette et al. (5,186,982), Brooks (6,915,928) or Bryning et al. 2001/0009136 dispensing process by including a calibration step as evidenced by Hess et al. (2003/0119193) with the expectation of maintaining a properly dispensed dot.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blette et al. (5,186,982), Brooks (6,915,928) or Bryning et al. 2001/0009136 in combination with Hess et al. (2003/0119193) further in combination with Bibeault et al. (6,775,879).

Features described above concerning the teachings of Blette et al. (5,186,982), Brooks (6,915,928) or Bryning et al. 2001/0009136 are incorporated here.

Blette et al. (5,186,982), Brooks (6,915,928) or Bryning et al. 2001/0009136 in combination with Hess et al. (2003/0119193) fail to teach cleaning the pin to remove residual coating material.



Art Unit: 1762

Bibeault et al. (6,775,879) teaches a needle cleaning system utilized for liquid dispensing systems that dispenses a quantity of material through a dispensing needle or transfer pin process (abstract).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified either pin process of Blette et al. (5,186,982), Brooks (6,915,928) or Bryning et al. 2001/0009136 in combination with Hess et al. (2003/0119193) to incorporate a pin cleaning step as evidenced by Bibeault et al. (6,775,879) with the advantages of maintaining a clean pin for controlling the desired proper dispensing material.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blette et al. (5,186,982), Brooks (6,915,928) or Bryning et al. 2001/0009136 in combination with Banno et al. (6,761,925) or Speakman (6,503,831).

Features described above concerning the teachings of Blette et al. (5,186,982), Brooks (6,915,928) or Bryning et al. 2001/0009136 are incorporated here.

Blette et al. (5,186,982), Brooks (6,915,928) or Bryning et al. 2001/0009136 in fail to teach forming a line or filling a via.

Banno et al. (6,761,925) or Speakman (6,503,831) both teach using droplet deposition techniques to form circuit lines within a via (abstract and Figures).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified either pin process of Blette et al. (5,186,982), Brooks (6,915,928) or Bryning et al. 2001/0009136 to form a line or fill a via as evidenced by Banno et al. (6,761,925) or Speakman (6,503,831) with the expectation of achieving similar success.



*Response to Arguments*

5. Applicant's arguments filed 11/3/06 have been fully considered but they are not persuasive.

Applicant argued that Blette et al. (5,186,982), Brooks (6,915,928) or Bryning et al. 2001/0009136 fail to teach at the retraction of the punch to be coplanar, orifice member having first and second surfaces and a pressurized chamber.

The Examiner agrees in part. While the acknowledges the fact that the references fail to teach retracting the pin/punch to a coplanar position, they all do retract the pin/punch so as to release the material on the substrate. They all talk about a "seal" with the pin and the orifice. It is the Examiner's position that the degree to which the pin/punch is withdrawn would be a matter of design choice by one practicing in the art. With respect to the orifice having first and second sides and a pressure chamber, these are taught by the references as detailed above.

Applicant argued the size of the droplet and the orifice are not disclosed.

This was addressed above.

Applicant argued that Bibeault et al. (6,775,879) teaches a needle cleaning step not in the retracted coplanar state but over an orifice.

While the Examiner acknowledges this fact, it is the Examiner's position that one skilled in the art would be suggested to clean the pin/punch after deposition and prior to retracting

Art Unit: 1762

within the orifice so as prevent clogging. Hence, the cleaning would be done either outside of the coplanar state or at the coplanar state. It is the Examiner's position that this combination would suggest to one skilled in the art to either position with that expectation of achieving similar success.

Applicant argued Banno et al. (6,761,925) or Speakman (6,503,831) while teaching forming circuit line in vias, fails to teach the claimed coating material and substrate.

While the Examiner acknowledges this fact, it is the Examiner's position that one skilled in the art at the time the invention was made would have had a reasonable expectation of achieving similar success regardless of the coating material or substrate utilized. If applicant disagrees and can provide criticality concerning the materials, the Examiner will reconsider his position.

Applicant argued that Hess et al. (2003/0119193) fails to teach calibration based on adjusting the parameters.

The Examiner disagrees as detailed above Hess et al. (2003/0119193) teaches a feedback control loop with calibration of the droplets.

Art Unit: 1762

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1762

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

 11/10/07

Brian K Talbot  
Primary Examiner  
Art Unit 1762

BKT